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SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

LIN, KENNY S

ART UNIT PAPER NUMBER

2152

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/904,566	Applicant(s) JOON-BO ET AL.	
	Examiner Kenny Lin	Art Unit 2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 2-16 are presented for examination. Claim 1 is canceled.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/18/2007 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils et al (Wils), US 6,397,260, in view of in view of Erikson et al (Erikson), US 6,836,862.
5. Wils and Erikson were cited in the previous office action.

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6. As per claim 3, Wils taught the invention as claimed including a method for building up backup master information, comprising the steps of:

- a. Receiving connection information from at least one of a plurality of slaves in a network (col.6, lines 57-60: broadcasting their own advertisements);
- b. Determining a priority of said at least one of the plurality of slaves to be used as a backup master, when the network master disappears, according to the received connection information (col.5, lines 51-54, col.6, lines 57-63); and
- c. Announcing the determined priority to at least another one of the plurality of slaves (col.6, lines 60-63).

7. Wils did not specifically teach that the received connection information includes received signal strength indication. Erikson taught a network of devices acting as master and slaves using signal strength indication wherein the devices are equipped with a receiver signal strength indicator that can be used to measure the strength of the incoming signal (col.2, lines 16-21, col.3, lines 37-42, col.5, lines 31-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils and Erikson because Erikson's teaching of using received signal strength indication enables Wils' method to support devices used for voice applications to measure the strength of the incoming signal (see Erikson, col.2, lines 16-19).

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8. As per claim 2, Wils and Erikson taught the invention substantially as claimed in claim

3. Wils further taught that the steps a. through c. are repeated in a predetermined cycle (col.5, lines 57-67, col.6, lines 1-7).

9. As per claim 7, Wils and Erikson taught the invention as claimed in claim 3. Wils further taught that in the step c., the determined priority of the backup master is announced to the at least another one of the plurality of slaves, through a broadcasting channel (col.6, lines 60-63).

10. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Wils and Erikson as applied to claim 3 above, and further in view of Lynch et al (Lynch), US 5,586,338.

11. As per claim 4, Wils and Erikson taught the invention substantially as claimed in claim 3. Erikson further taught to use receiver strength indicator to measure the strength of the incoming signal (col.2, lines 16-19). Wils and Erikson did not specifically teach that in the step b., if said at least one of the plurality of slaves has a higher RSSI than another one of the plurality of slaves, said at least one of the plurality of slaves is given a higher priority, which is used to choose a new network master. Lynch taught that priority can be determined based on RSSI or other characteristics that enhance the quality of communication (col.9, lines 15-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Erikson and Lynch because Lynch's teaching of using various methods in determining and deciding the ranking of the priority of the plurality of slaves ensures

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Wils and Erikson's method a greater chances of successful communications by setting high priority base on high quality of communication of the slaves (see Lynch, col.9, lines 9-26).

12. As per claim 5, Wils and Erikson taught the invention substantially as claimed in claim 3. Wils and Erikson did not specifically teach that in the step b., if said at least one of the plurality of slaves has a higher link quality value than another one of the plurality of slaves, said at least one of the plurality of slaves is given a higher priority, which is used to choose a new network master. Lynch taught that priority can be determined based on RSSI or other characteristics that enhance the quality of communication (col.9, lines 15-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Erikson and Lynch because Lynch's teaching of using various methods in determining and deciding the ranking of the priority of the plurality of slaves ensures Wils and Erikson's method a greater chances of successful communications by setting high priority base on high quality of communication such as the link quality of the slaves (see Lynch, col.9, lines 9-26).

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Erikson as applied to claim 3 above, and further in view of Johansson, US 6,975,613.

14. Johansson was cited in the previous office action.

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15. As per claim 6, Wils taught the invention substantially as claimed in claim 3. Wils did not specifically teach that the network is a personal ad-hoc network. Johansson taught to implement methods to an ad-hoc network to support ad hoc connections of wireless systems including Bluetooth (col.1, lines 57-67, col.2, lines 1-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils and Johansson in order to implement Wils' method in all suitable and desired networks including ad-hoc network to support ad-hoc connections of wireless systems and also adapt Bluetooth technology.

16. Claim 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils et al (Wils), US 6,397,260, in view of in view of Osada, US 6,111,889.

17. As per claim 8, Wils taught the invention substantially as claimed including a method for designating a new master of a network when a preexisting network master disappears, the method comprising the steps of:

- a. Determining at a slave whether the preexisting network master has disappeared (col.5, lines 51-54);
- b. If the preexisting network master has disappeared, checking a rank assigned to the slave based on connection information received from the slave, wherein the rank is used to choosing a new network master and is received before the disappearance of the preexisting network master (col.5, lines 51-54, col.6, lines 57-60); and

- c. Changing the slave to the new network master if it is determined that the rank is highest of any one assigned to a plurality of slaves (col.5, lines 51-56, col.6, lines 60-63).

18. Wils did not specifically teach that the rank assigned to the slave is assigned by the preexisting network master. However Osada taught to the network master to determine slave priority and transmit the priority to the slaves based on slave signal request status (col.2, lines 37-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils and Osada because Osada's teaching of the network master assigning slave rankings enables Wils' method to rank the priority of backup master orders by the original master based on the slaves requesting status signal.

19. As per claim 14, Wils taught the invention as claimed including a method for establishing a connection between a new master and a remaining plurality of slaves of a network when a preexisting network master disappears, the method comprising the steps of:

- a. Checking whether the preexisting network master has disappeared (col.5, lines 51-54);
- b. Checking backup master rank information, based on connection information received, when it is determined that the preexisting network master has disappeared in the step a. (col.5, lines 51-54, col.6, lines 57-60).
- c. Attempting to establish a connection with the new network master when it is determined that one of the remaining plurality of slaves does not have a highest

priority, according to the backup master rank information (col.5, lines 51-56, col.6, lines 60-63); and

- d. Remaining as one of the remaining plurality of slaves if a connection with the new network master is established in step c. (col.5, lines 51-56, col.6, lines 60-63).

20. Wils did not specifically teach that the rank information assigned to the slave is assigned by the preexisting network master. However Osada taught to the network master to determine slave priority and transmit the priority to the slaves based on slave signal request status (col.2, lines 37-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils and Osada because Osada's teaching of the network master assigning slave rankings enables Wils' method to rank the priority of backup master orders by the original master based on the slaves requesting status signal.

21. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Osada as applied to claim 8 above, and further in view of Ying, US 6,061,600.

22. Ying was cited in the previous office action.

23. As per claim 9, Wils and Osada taught the invention substantially as claimed in claim 8. Wils and Osada did not specifically teach that after the step c., further comprising the step d. of performing inquiry scan and page scan. Ying taught to perform inquiry scan and page scan after

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a new master is determined (col.9, lines 6-22, col.10, lines 15-23, 54-62, col.11, lines 24-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada and Ying because Ying's teaching of performing inquiry scan and page scan enables Wils and Osada's method to keep track of events happening and detect failure in the system (see Ying, col.9, lines 19-22).

24. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils, Osada and Ying as applied to claim 9 above, and further in view of Akyol et al (Akyol), US 6,701,448 and "Official Notice":

25. Akyol was cited in the previous office action.

26. As per claim 10, Wils, Osada and Ying taught the invention substantially as claimed in claim 9. Ying further taught to check for a change of a master mode and terminating the master mode when a change to the master mode is determined (col.2, lines 37-39, col.3, lines 15-20, col.7, lines 39-49, col.9, lines 6-22, 43-48, col.10, lines 15-23, 36-43, 54-62, col.11, lines 1-9, 24-58). Wils, Osada and Ying did not specifically teach that after step d., further comprising the steps of e-g. Akyol taught a backup master designating method to:

e. determining whether a new device attempts to establish a connection through the network (col.7, lines 18-35);

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f. accepting a request of the new device for connection, requesting the new device to change to a role as a slave, and remaining as the new network master (col.7, lines 21-35);

g. storing information of the new device, and announcing the information of the new network master and each of the plurality of slaves linked throughout the network, to each of the plurality of slaves linked throughout the network (col.6, lines 51-55, 60-67, col.7, lines 5-8).

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada, Ying and Akyol because Akyol's teaching of responding to requests for new devices to join the group enables more devices in Wils, Osada and Ying's method to join or connect with the master node to expand the group. Wils, Osada Ying and Akyol did not specifically teach that if there is no connection request from the new device, return to step d. when no change to the master mode is determined. However, it is obvious that the mastership of the master node is not affected when no new device, which might affect the mastership because of its priority, is requesting to connect with the master node. Official Notice is taken that it would have been obvious to maintain the structure of the group and the mastership of the master node when no additional node is joining the group. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada, Ying, and Akyol and further maintain the master mode when no change in the group structure is made.

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28. As per claim 11, Wils, Osada, Ying and Akyol taught the invention substantially as claimed in claim 10. Ying further taught that the change of master mode is determined when a role of a device serving as the preexisting network master is changed to a role as one of the plurality of slaves (col.2, lines 37-39, col.3, lines 15-20, col.7, lines 39-49, col.9, lines 6-22, 43-48, col.10, lines 15-23, 36-43, 54-62, col.11, lines 1-9, 24-58). Wils, Osada, Ying and Akyol did not specifically teach that that change is caused by a user, when a Bluetooth function of the preexisting network master is switched off, or when power of the preexisting network master is turned off. However, it is obvious for a user to power off the master node to cause a change in master mode (e.g., forcing master disappearing). Official Notice is taken that it would have been obvious to have a user to manually switch the master mode in any desired circumstances. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada, Ying, Akyol and further allows user to manually control the switching of mastership in Wils, Osada, Ying and Akyol's method when it is needed.

29. Claim 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Osada as applied to claim 8 above, and further in view of Ying, US 6,061,600, Akyol et al (Akyol), US 6,701,448 and "Official Notice".

30. As per claim 12, Wils and Osada taught the invention substantially as claimed in claim 8. Wils and Osada did not specifically teach steps a1-a3. Ying taught to check a connection status with the preexisting network master (col.2, lines 37-39, col.9, lines 6-22, col.10, lines 15-23, 54-65, col.11, lines 24-58) and determine whether the preexisting network master has disappeared

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(col.2, lines 48-51, col.7, lines 5-23, 35-49, col.10, lines 50-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada and Ying because Ying's teaching of checking a connection status enables Wils and Osada's method to verify if the master is connected or not. Wils, Osada and Ying did not specifically teach that step a. comprises the sub-steps of a2-a3. Akyol taught a backup master designating method to:

a2. attempting to reconnect with the preexisting network master if disconnection is detected in sub-step a1 (col.6, lines 60-67, col.7, lines 5-8, 21-35).

a3. checking whether reconnection with the preexisting network master is successful, and returning to the sub-step a1. if the reconnection with the preexisting network master is successful (col.7, lines 21-35).

31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada, Ying and Akyol because Akyol's teaching of responding to requests for new devices to rejoin the group enables the devices in Wils, Osada and Ying's method to reconnect with the master node when connection is lost. Wils, Osada Ying and Akyol did not specifically teach that if reconnection with the preexisting network master is not established in sub-step a3. informing a host of the event as a "Disconnection Complete Event". However, it is obvious to report error when attempting to connect with the master node fails. Official Notice that both the concept and advantage of sending notification to inform of errors is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada Ying, and

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Akyol and further uses event notification method to inform the hosts of failure in communication with the master node.

32. As per claim 13, Wils, Osada, Ying and Akyol taught the invention substantially as claimed in claim 12. Ying further taught that the sub-step a1 is repeated in a predetermined cycle while the connection with the preexisting network master remains (col.2, lines 37-39, col.10, lines 59-65).

33. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wils and Osada as applied to claims 8 and 14 above, and further in view of Erikson et al (Erikson), US 6,836,862.

34. As per claims 15 and 16, Wils and Osada taught the invention substantially as claimed in claims 8 and 14. Wils and Osada did not specifically teach that the connection information received from the slave by the preexisting network master includes at least one of received signal strength indication and link quality information. Erikson taught a network of devices acting as master and slaves using signal strength indication wherein the devices are equipped with a receiver signal strength indicator that can be used to measure the strength of the incoming signal (col.2, lines 16-21, col.3, lines 37-42, col.5, lines 31-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Wils, Osada and Erikson because Erikson's teaching of using received signal strength indication

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enables Wils and Osada's method to support devices used for voice applications to measure the strength of the incoming signal (see Erikson, col.2, lines 16-19).

Response to Arguments

35. Applicant's arguments regarding claims 2-7 filed 1/18/2007 have been fully considered but they are not persuasive.

36. In the remark, applicant argued (1) Wils does not teach "determining a priority of said at least one of the plurality of slaves to be used as a backup master, when a network masters disappears, according to the received connection information" since the priority of the routers is preconfigured. (2) No motivation to combine Wils with Erikson to modify Wils to determine a priority of at least one of the plurality of slaves to be used as a backup master, when a network master disappears, according to RSSI information received. (3) Lynch does not teach or suggest if at least one of the plurality of slaves has a higher RSSI or link quality value than another one of the plurality of slaves, the at least one of the quality of slaves is given a higher priority, which is used to choose a new network master.

37. Examiner traverse the argument that:

As to point (1), This argument was raised in the previous response and was addressed by the examiner in the previous office action. Wils taught specifically in column 5, lines 51-54 and column 6, lines 57-63 to determine a priority of said at least one of the plurality of slaves to be used as a backup master, when the network master disappears, according to the received

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connection information. Wils taught that when the network master fails (e.g., realize that no VRRP Advertisement are being transmitted), the slaves exchange connection information (e.g. broadcasting their own Advertisements, and comparing the priorities) and determine a priority (e.g. order of the priority from high to low) of which slave to be used as a backup master (e.g. the router having the highest configured priority for each Virtual Router assumes Master status).

Although the applicants pointed out that the priority (e.g. priority value) of the slaves are preconfigured, the priority order is not known by the slaves until their advertisements are broadcasted. In another words, the slaves only knows their own priority value, but have no way of knowing if their priority is higher until the comparison is performed. Therefore, the actual priority (e.g. priority order to assume master status), is only determined when all priority values are exchanged and compared. Furthermore, since the claims does not indicate what device is determining the priority, Wils's teaching of broadcasting priority to each other slaves and having each slave comparing all received priority with its own reads on the current claim language.

As to point (2), This argument was raised in the previous response and was addressed by the examiner in the previous office action. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., determine a priority of at least one of the plurality of slaves...according to signal strength indication and/or link quality information) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims, at most, claimed to **include** RSSI and/or link quality information in the connection information, but fails to define that the RSSI and/or link quality information is used

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for determine slave priorities. Determining priority basing on connection information (which includes RSSI and/or link quality) does not necessary conclude that the priority is determined based on RSSI. It is also possible that the priority is determined based on information other than RSSI/link quality that is included in the connection information.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is in the knowledge generally available to one of ordinary skill in the art. Although applicant argued that RSSI is not even a parameter which would be used in a wired network such as Wils' network, it does not prevent the slaves device to comprises wireless abilities in communication with other networking devices. Since the claims fails to define which connection link the RSSI is indicating, it would have been obvious that the RSSI may be indicating a signal strength other then the connection between the master and the slave device (e.g. indicating signal strength of slave device and some wireless device). Although Wils's teaching of selecting a backup master is shown in a router network, the scope of the method may also be used and implemented in a wireless network environment.

As to point (3), in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In*

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re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Wils taught to choose the highest priority slave as the new network master. Lynch taught that RSSI can be used as one of the determination factors to determine priority. In combination of Wils and Lynch, one would have been motivated to use RSSI to determine priority ranking and select the slave with the highest ranking RSSI as the new master.

38. Applicant's arguments with respect to claims 8-16 have been considered but are moot in view of the new ground(s) of rejection.

39. Because Applicants have failed to challenge any of the Examiner's "Official Notices" stated in the previous office action in a proper and reasonably manner, they are now considered as admitted prior art. See MPEP 2144.03

Conclusion

40. A shortened statutory period for reply to this Office action is set to expire THREE MONTHS from the mailing date of this action.

41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl

March 16, 2007

Handwritten signature and initials in black ink. The signature is a cursive 'Kens' and the initials are a stylized 'Z'.